

**GUJARAT TECHNOLOGICAL UNIVERSITY**B.E. Sem-V<sup>th</sup> Examination December 2010**Subject code: 152805****Subject Name: Production and Applications of Colorants and Auxiliaries****Date: 21 /12 / 2010****Time: 03.00 pm - 05.30 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Describe Dow process & cumene process in detail with its chemical reactions. **07**  
(b) Give manufacturing of H-acid & J-acid with chemical reactions. **07**
- Q.2** (a) Describe Coal-tar distillation process with neat diagram. **07**  
(b) What is sulphonation? Explain in detail with suitable examples. **07**
- OR**
- (b) What is chlorination? Explain in detail with suitable examples. **07**
- Q.3** (a) Discuss non-textile uses of the dye stuff in detail. **07**  
(b) Discuss about Dye fixing agents, Leveling agents. **07**
- OR**
- Q.3** (a) Explain Bechamp Reduction in detail with necessary chemical reaction. **07**  
(b) Explain Carriers and discharging agents. **07**
- Q.4** (a) Give the manufacturing process for TRO with its application in textile processing. **07**  
(b) What are cationic surfactants? Discuss in detail the chemistry and applications of quaternary ammonium compounds. **07**
- OR**
- Q.4** (a) Explain the phenomenon of wetting, detergency and emulsification with examples from textile processing. **07**  
(b) Discuss in detail about buffers and sequestering agents with suitable examples. **07**
- Q.5** (a) Discuss the advantageous properties of Non-ionic surfactants with its manufacturing process in brief. **07**  
(b) Give the classification of textile auxiliaries. Explain the meaning of surfactant and its mode of action. **07**
- OR**
- Q.5** (a) Define anionic surfactants. Discuss any one class of anionic surfactant in detail. **07**  
(b) Define nonionic surfactants. Explain Alcohol Ethoxylates and Nonyl phenol Ethoxylates. **07**

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